

WHAT IS CLAIMED IS:

1. A therapeutic method for treating a bone-associated cancer while reducing the incidence of sustained renal dysfunction comprising:
  - 5 (a) hydrating a human cancer patient;
  - (b) parenterally administering a dose of 650-825 mCi/m<sup>2</sup> <sup>166</sup>Ho-DOTMP to said patient in an aqueous vehicle comprising an effective antiradiolytic amount of a pharmaceutically acceptable radioprotectant;
  - 10 (c) administering a dose of about 140-200 mg/m<sup>2</sup> melphalan to the patient; and
  - (d) providing the patient with a stem cell transplant;wherein the patient is not subjected to total body irradiation in conjunction with the therapeutic method.
- 15 2. The method of claim 1 wherein the patient is refractory to treatment, or in relapse after treatment, with melphalan and/or total body irradiation.
3. The method of claim 1 or 2 wherein the dose is effective to deliver a  
20 mean dose of about 15-30 Gy to the bone marrow of said patient.
4. The method of claim 3 wherein about 200 mg/m<sup>2</sup> melphalan is administered in step (c).
- 25 5. The method of claim 1, 2 or 3 wherein the cancer is multiple myeloma.
6. The method of claim 1, 2 or 3 wherein the cancer is metastatic breast or prostate cancer.
- 30 7. The method of claim 1, 2 or 3 wherein the cancer is Ewing's sarcoma.

8. The method of claim 1, 2 or 3 wherein the radioprotectant is ascorbic acid or gentisic acid.
9. The method of claim 8 wherein the concentration of ascorbic acid is about 35-75 mg/ml.
10. The method of claim 9 wherein the vehicle is buffered to about pH 7-8.
11. A therapeutic method for treating multiple myeloma comprising:
- (a) hydrating a multiple myeloma patient;
  - (b) parenterally administering a dose of  $^{153}\text{Sm-EDTMP}$  effective to deliver about 30-40 Gy of radiation to the bone marrow of said patient;
  - (c) administering a dose of about 140-200 mg/m<sup>2</sup> of melphalan to said patient; and
  - (d) providing the patient with a stem cell transplant; wherein the patient is not subjected to total body irradiation in conjunction with the therapeutic method.
12. The method of claim 11 wherein the patient is refractory to treatment, or in relapse after treatment with, melphalan and/or total body irradiation.
13. The method of claim 11 or 12 wherein about 200 mg/m<sup>2</sup> melphalan is delivered in step (c).